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PROBLEMS OF COORDINATING MEDICO-BIOLOGICAL RESEARCH

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PROBLEMS OF COORDINATING MEDICO-BIOLOGICAL RESEARCH

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From 31 March to 4 April 1959 a scientific conference devoted to the problems of physiology and pathology of blood circulation took place in Kiev. The last part of the conference consisted of the Third Coordinating Meeting which discussed the report of the Active Member of the Academy of Medical Sciences /AMS/ USSR, Prof. V.N. Chernigovskiy, Deputy Chairman of the Problem Commission No 2 "Basic Physiological Functions and their Neural and Humoral Regulation." The meeting approved the general aims, orienting itself on those upon which the scientific research work on the special problem of "Functions of the Cardio-Vascular System and their Regulation in Norm and in Pathology" was to be based.

On the basis of the analysis of works submitted at the conference and the wishes and recommendations sent to the main institute by the members of the problem commission -- the curators of the particular problem -- (Academician of the Academy of Sciences UkSSR Prof Ye. B. Babskiy, Active Member of the AMS USSR Prof. N.N. Gorev, Prof. N.V. Danilova, Active Member of the AMS USSR Prof. N. N. Savitskiy, Corresponding Member of the AMS USSR Prof. N.A. Fedorov), the speaker suggested eight objectives to be followed in working out problems of physiology and pathology of blood circulation during the next few years.

All the aims proposed by the speaker were accepted as a general trend of the study of physiology and pathology of the cardio-vascular system, and, with some additions, were fixed in the resolution passed by the meeting. In the course of the discussion of recommended research objectives the coordinating council encountered some general organizational, problems of method.

At the present time, in the second year of the work of problem commissions and main institutes of the AMS USSR, it is becoming obvious that the wide division according to specialties (fifty problem commissions of the AMS USSR) is insufficient. It is necessary to find organizational forms which would organically predetermine the complex development of individual problems.

If we take as a concrete example the particular problem "Functions of the cardio-vascular system and their regulation in norm and pathology", we shall find that it is being developed from various points of view by at least five problem commissions. Parallel with the fact that this particular problem is part of the Second problem of the Seven-Year long-range Plan of the AMS USSR, the same problem is being worked on from a specific point of view by clinicians and morphologists. One can welcome the versatility of studies of this most important particular problem; however, lack of coordination and disunity are evident in the studies of scientists, and various specialists, who are working on the problems of physiology, pathology, and the clinical aspects of blood circulation.

The Third Coordinating Meeting passed a resolution to ask the Bureau of the Problem Commission No 2 to place before the Scientific Planning Commission of the Presidium AMS USSR the problem of coordinating the work of various problem commissions. The forms of this unification or contact may vary. One suggestion is to organize permanent coordinating problem conferences whose decisions must be binding on all problem commissions within the coordinating conference. Other organizational forms may be suggested. The main thing is to assert the principle and the necessity of its implementation.

In considering essential the establishment, of organizational conditions which would ensure effective complex and purposeful work in the study of urgent problems of physiology and pathology of blood circulation, the Third Coordinating Meeting supported the decision of the scientific conference on the organization of a scientific society which would unify the representatives of various organizations working in the field of blood circulation, as well as publish a special journal on the problems of blood circulation.

The question of the forms and methods of coordination work was discussed at the Third Coordinating Meeting also from a somewhat different point of view. At the present time there exist several planning and coordination centers

of scientific work in the Soviet Union: the AS USSR, AMS USSR, republic and branch academies, UMS of ministries, etc. Exchange of information on the work of these centers of planning and coordination of scientific work is very poor, and business contacts are rare. As a result, there is virtually no unified coordination of planning on an All-Union scale.

Having outlined a number of concrete measures the realization of which must considerably improve the exchange of information among various centers of coordination and planning, the Third Coordinating Meeting believes that the time is propitious for raising the question of the setting up of All-Union branch centers, particularly of transforming the AMS USSR into an All-Union center of coordination and planning of all aspects of medical and biological science in the country. The Third Coordinating Meeting resolved to request the Bureau of Problem Commission No 2 to assume the initiative in organizing a discussion of this problem in proper, starting with the Presidium of the AMS USSR.

The scientific organizational problem of active planning brings to mind the great urgency of the problem which had already been discussed at previous coordinating conferences -- that of cadres, the material and technical equipment of scientific centers, particularly of the chairs of medical VUZ /higher educational institutions/ which are working out the second problem of the long-range problem plan of the AMS USSR.

The Third Coordinating Meeting decided that the reviewing of plans and reports was not an effective type of help. A resolution was passed on the organization of short seminars to acquaint the workers of the scientific institutions in outlying districts with the modern tools and methods of investigation. However, the implementation of this idea requires a thoughtful and careful approach. It is obvious that without the active participation of the Ministry of Health USSR, the AMS USSR and Problem Commission No 2 will be unable to find an effective solution of this very important problem.

We must call attention to the decision already taken in regard to this question by the Second Coordinating Meeting (22-9-28): "To apply to the Presidium of the AMS USSR and the appropriate higher organizations for material and technical aid to institutions in outlying districts in their scientific research work for the purpose of raising the general technical and systematic level of research.

"To recommend the convening of an inter-departmental conference in 1959 to be attended by scientists, engineers-

designers, and representatives of the medical industry. The purpose of the conference would be to develop standard equipment needed for research specified by the Seven-Year long-range plan on problem No 2."

Naturally, the coordinating meeting could only raise these problems of method and organization. Their solution depends not only on the Presidium of the AMS USSR but also on the joint coordinated decisions of a number of authoritative organizations.

The Coordinating Meeting resolved to request the Problem Commission No 2 of the AMS USSR and the Problem Commission of the AS UkSSR to place these problems before related organizations and to request their resolution.

The results of the work of the Kiev scientific conference on problems of physiology and pathology of blood circulation and the Third Coordinating Meeting are highly esteemed by Problem Commission No 2 and have been made the basis of recommendations for the subject of a plan for 1960 on the "Functions of the Cardio-Vascular System and their Regulation in Norm and Pathology." The resolution passed by the Third Coordinating Meeting is given below.

The Third Coordinating Meeting of Problem Commission No 2 of the AMS USSR ("Basic Physiological Functions and their Nervous and Humoral Regulations") and of the problem commission related to the problem of the AS UkSSR notes that during recent years there has been an enhancement in the development of the most urgent problems of physiology and pathology of blood circulation; success has been achieved in the study of neural regulation of the vascular tonus, in the characteristics of reflex effects on the cardio-vascular system from various receptor areas of the organism, in the establishment of the mechanisms of interrelation of local vascular changes with the general homeodynamic changes, in the clarification of mechanisms of changes in neuro-humoral regulation in experimental hypertension, in the description of vascular disturbances under various functional conditions (shock, hypothermia, muscular work, etc.); a number of new data has been obtained on mechanical disturbances of the coronary circulation, on the role of hormones in the regulation of the vascular tonus and on the effects of a number of pharmacological preparations on the cardio-vascular system.

However, in acknowledging these successes, the coordinating meeting notes that some of the most important trends in the physiology and pathology of blood circulation have received insufficient attention. It must be stated that Soviet physiologists have not given serious consideration to the thorough study of the general physiology of

the heart and blood vessels, in particular, to the specific nature of hemodynamics. In recent years there has been a lag in the research in the field of electrophysiological and biochemical processes which are taking place in the cardiac muscle, and a marked insufficiency in the study of metabolic changes in the heart under normal and pathological conditions.

There has been no proper progress in the studies designed to clarify the role of cortical and subcortical structures in the regulation of blood circulation, the neural mechanisms of vascular dilatation, and the mechanisms of the development of hypertonic states.

Special attention must be given to the study of the characteristics of capillary blood circulation, changes in the permeability of capillaries, interrelation between metabolic changes in various organs and local blood circulation.

One must also consider inadequate the work on the creation of experimental models of such pathological conditions as hypo- and -hypertonia and coronary insufficiency; a more extensive and thorough work is required on an experimental model of arteriosclerosis.

In view of the urgency of the problem of physiology and pathology of the cardio-vascular system, the Third Coordinating Meeting resolves:

1. To consider essential the continued coordination of the studies of the physiology and pathology of blood circulation, with special attention to cooperation among morphologists, pathologists, and clinicians in studying urgent matters relating to this problem.

2. To request Problem Commission No 2 of the AMS USSR to place before the Scientific Planning Commission of the Presidium of the AMS USSR the problem of setting up a unified coordinating center, or organized relations in the work of the problem commissions of the AMS USSR which are working on the problem of "Physiology, pathology, and clinical aspects of blood circulation."

3. The following objectives are to be recommended as a general line of investigation on which the entire work of the study of physiology and pathology of blood circulation should be based during the coming years: 1) General physiology of the heart and blood vessels, the study of metabolic processes in the heart, as well as in other organs upon insufficiency of blood circulation; 2) General and

comparative physiology and the biophysics of hemodynamics; 3) Blood circulation in the regions and organs in norm and pathology (attention must be concentrated on the study of the characteristics of coronary, cerebral, pulmonary, and kidney circulation; 4) Interrelation of the regional, systemic, and general circulation, particularly in their age-related aspect; 5) Pathogenesis of disturbances of systemic blood circulation in hyper- and hypo-tonia, and their experimental therapy; 6) Physiology of capillary blood circulation; 7) Physiology and pathology of terminal states; 8) Physiology and pathology of lymph circulation and lymph formation; 9) Role of humoral, and particularly, of factors in the regulation of blood circulation in norm and pathology; 10) Central regulation of blood circulation; 11) Development of neuro-humoral regulation of the cardiovascular system in onto- and philo-genesis; 12) Development of methods of evaluation of blood circulation as a whole, and human circulation in particular under various conditions affecting the human organism; 13) Development of methods of artificial blood circulation and utilization of these methods for the study of circulation problems; 14) Study of the effect of new medicinal preparations in normalizing the functions of the cardio-vascular system.

4. The organic unification of the work of the scientific conference with that of coordinating activity is organizationally sound, but it is necessary to call the attention of the coordinating institutions (AMS USSR and AS UkSSR) to the need to ensure a maximum exchange of information. The Coordinating Meeting recommends the use of the following methods of information: 1) Publication of annual summaries of planned subject matter and reports on the problem (in this respect it is necessary to work out a universally obligatory simple scheme of annotation of the subject matter of the annual plans and reports); 2) Convening symposiums on concrete problems of the physiology and pathology of blood circulation; 3) Acquainting members of the leading centers with the cadres of workers on the periphery and with the conditions under which they work.

5. To conduct seminars based on thorough preparatory work in the new methods of research mainly for the benefit of associates of peripheral scientific institutions.

6. Since the existence of several centers (AS USSR, AMS USSR, AS UkSSR, and other branch academies and academies of various republics) results in the actual absence of

coordination on an All-Union scale, and, particularly, in an insufficient exchange of information and insufficiently complex scientific research into the field of medico-biological sciences, Problem Commission No 2 of the AMS USSR under the Presidium of the AMS USSR and the appropriate problem commission of the AS UkSSR under the Presidium of the AS USSR, should be requested to place on the agenda the question of setting up All-Union branch centers of planning and coordination of scientific work, and, particularly, of converting the AMS USSR into an All-Union center of coordination and planning of all aspects of medico-biological science in the country.

END

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